

REMARKS

Claims 16-27 remain rejected under 35 U.S.C. 102(b) as anticipated by, or in the alternative under 35 U.S.C. 103(a) as obvious over, Furuta et al. (US 6124004). Included by reference herein is the previous response to this rejection.

Applicants deal first with the rejection under 35 U.S.C. 102(b). Except as noted below, the Examiner's description of Furuta is essentially correct, but it does not state what is not mentioned in Furuta. One of these unstated items is that the fibers be short. While Furuta does state that the fiber is present in the form of a woven or nonwoven fabric (col. 3, lines 4-5), this does NOT mean that the fiber is present in short lengths. Nonwoven fabrics may be made of short fibers or long (essentially continuous) fibers or a combination of the two. Nowhere does Furuta state that his fiber may or should be short fibers.

Further, as previously argued by the Applicants, nowhere does Furuta state what his product has an apparent density that is a minimum percent of his calculated density. As the Examiner has stated, this percentage is dependent on the process conditions used (in Furuta) for the "lamination" of the components. It is also pointed out that the lamination process described by the Examiner in the office action is not necessarily correct, that it for instance, as shown in Furuta's Figure 2 wherein a fabric is used, that the lamination of the fabric and the metal foil take place simultaneously.

Nevertheless there is no data within Furuta, nor any discussion within Furuta about conditions for the "lamination" that would yield a high apparent density. As the Examiner has pointed out in the "Response to Arguments", such conditions COULD have been used. However, since such data is missing from Furuta, it is clear the required minimum apparent density is not inherent in Furuta. "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." In re Oelrich et al. (CCPA 1981) 212 USPQ at 326. Furuta does not, for the purposes of this rejection under 102(b), have the required recitation about a minimum apparent density of the product.

As is well known, "Rejections under 35 U.S.C. 102 are proper only when claimed subject matter is identically disclosed or described in prior art; in other words,

all material elements recited in claim must be found in one unit of prior art to constitute anticipation;" In re Marshall (CCPA 1978) 198 USPQ 344. Since Furuta clearly lacks at least two limitations in the present claims, use of short fibers, and a product apparent density which is a certain minimum percentage of a calculated density, it does not anticipate the rejected claims.

As for the rejection under 103(a), again there is no hint within Furuta that short fibers be used, nor that a certain minimum apparent density of the product is desirable.

The fact that Applicants do not include within their claims specific conditions is not necessary to distinguish the process from Furuta. Specifically this refers to the exact periods needed to apply heat and pressure the amount of pressure applied, and the temperature used. This is specifically explained at p. 9, line 25 top p. 10, line 15 of the application. It would be clear to one skilled in the art that these conditions (time, temperature, pressure) would vary with items such as the particular thermoplastic used (because of its melting or softening point), the polymer molecular weight (which is related to viscosity), thicknesses of the various layers, etc. The point is that by producing the required sheet as described in the present claims, the conditions needed to achieve the desired result, such as the proper combination of time, temperature and pressure, are inherent in the process used, as described in the application.

This combination of required conditions is not apparent (obvious) from Furuta. As is agreed upon by both the Applicants and the examiner, Furuta does not discuss the desirability of having a certain minimum apparent (nor of course the conditions needed for that) density, nor does Furuta exemplify such a composition. So to one skilled in the art, what does Furuta explicitly or implicitly state or imply?

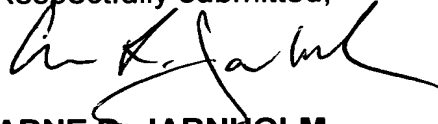
When read as a whole, certain parts of Furuta actually could be said to teach away from the presently required minimum apparent density of a (short) fiber impregnated with an LCP. If one consults Furuta about how the fibrous material functions and/or is useful and its relationship to the LCP layer there are three sections within Furuta which are pertinent, col. 13, lines 7-34, and col. 14, line 65 to col. 15, line 5, and Examples 5-6. At col. 13, lines 7-34 it states the fiber layer may be impregnated with a thermoset resin. It is unclear whether the fiber may be impregnated with the thermoset before or after (or either) the "lamination" step. If

impregnation before the lamination step, clearly the LCP can't fill (all of) the voids between the fibers, because some if not all of these voids are occupied by the thermoset. If after, there must be voids after the laminations, else the thermoset would not be able to penetrate nonexistent voids and form a prepreg-like material. Either way, it implies the LCP does not fill the voids between the fibers. At col. 14, line 65 to col. 15, line 5, it states an "adhesive layer" may be used between the LCP and fiber layer. This makes no sense unless a surface of the fabric is adhered to one side of the adhesive surface and the other side of the adhesive surface was adhered to the LCP. In this instance the obvious conclusion is that the LCP does not penetrate (much) into the fabric. In Examples 5 and 6 it appears the fabric was completely immersed in and impregnated by the thermoset used, then the thermoset cured, and therefore the LCP could not have penetrated into the fabric.

In summary, the only sections of Furuta that bear on whether the fabric is impregnated with the LCP at least imply that the LCP does not impregnate the fabric (fiber) as is described in the present claims. Thus, not only is there no suggestion in Furuta that a "solid" sheet be formed, as delineated in the presently claimed process, the only suggestions in Furuta as to the "fate" of the fabric (fiber) suggest that it is not produced under conditions that would be useful in the presently claimed process. Therefore Furuta does not render the present claims obvious.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,



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